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For: VEHICLE-BORNE SYSTEM AND METHOD FOR COUNTERING
AN INCOMING THREAT

1 1. A vehicle-borne system for countering an incoming threat, the system
2 comprising;
3 a sensing device configured to sense an incoming threat; and
4 an active protection system including a maneuverable interceptor
5 incorporating a plurality of kinetic energy rods and an aimable explosive charge
6 configured to deploy the kinetic energy rods in a predetermined direction; said active
7 protection system further including a detection subsystem configured to maneuver the
8 interceptor to intercept the incoming threat, said detection subsystem further configured
9 to determine if the interceptor will miss the threat, and then initiate said explosive charge
10 to aim the kinetic energy rods into a disbursed cloud in the trajectory path of the incoming
11 threat and between the incoming threat and the vehicle.

1 2. The system of claim 1 in which the incoming threat is chosen from the
2 group consisting of: a kinetic energy round munition, a shaped charged round, a heat
3 round, a missile, an artillery, and a stabilized rod.

1 3. The system of claim 1 in which said vehicle is a tank.

1 4. The system of claim 1 in which said vehicle is an armored personnel
2 carrier.

1 5. The system of claim 1 in which said interceptor includes a warhead section
2 with a plurality of bays for holding said plurality of kinetic energy rods.

1 6. The system of claim 5 in which said bays are orientated such that said
2 kinetic energy rods are deployed in different predetermined directions for creating said
3 disbursed cloud.

1 7. The system of claim 1 in which said detection subsystem includes a radar
2 module for determining if the interceptor will hit or miss the incoming threat.

1 8. The system of claim 1 in which said detection subsystem includes a
2 control unit for initiating said explosive charge.

1 9. The system of claim 1 in which said kinetic energy rods are made of high
2 density tantalum.

1 10. The system of claim 1 in which said kinetic energy rods have a ductile
2 composition for preventing shattering thereof upon impact with the incoming threat.

1 11. The system of claim 1 in which said rods are hexagon shaped.

1 12. The warhead of claim 1 in which the kinetic energy rods have a cylindrical
2 cross section.

1 13. The warhead of claim 1 in which the kinetic energy rods have a non-
2 cylindrical cross section.

1 14. The warhead of claim 1 in which the kinetic energy rods have a star-
2 shaped cross section.

1 15. The warhead of claim 1 in which the kinetic energy rods have a cruciform
2 cross section.

1 16. The warhead of claim 1 in which the kinetic energy rods are disk shaped
2 with flat ends.

1 17. The warhead of claim 1 in which the kinetic energy rods have a non-flat
2 nose.

1 18. The warhead of claim 1 in which the kinetic energy rods have a pointed
2 nose.

1 19. The warhead of claim 1 in which the kinetic energy rods have a wedge-
2 shaped nose.

1 20. The system of claim 1 in which said explosive charge is shaped such that
2 detonation of said charge deploys said plurality of kinetic energy rods in a predetermined

3 direction to form said disbursed cloud.

1 21. The system of claim 1 in which said vehicle is a tank chosen from the
2 group consisting of a BMP-3 tank, a T-80MBT tank, a BMP-3 ICV tank, an ARENA
3 APS tank, and a T-80UM2 tank.

1 22. A vehicle-borne incoming threat countering method, the method
2 comprising:
3 sensing an incoming threat;
4 activating an active protection system including a maneuverable
5 interceptor incorporating a plurality of kinetic energy rods and an aimable explosive
6 charge configured to deploy the kinetic energy rods in a predetermined direction;
7 maneuvering the interceptor to intercept the incoming threat;
8 detecting whether the interceptor will miss the incoming threat; and
9 if the interceptor will miss the incoming threat, then initiating the
10 explosive charge to aim the kinetic energy rods into a disbursed cloud in the trajectory
11 path of the incoming threat and between the incoming threat and the vehicle.

1 23. The system of claim 22 in which the incoming threat is chosen from the
2 group consisting of a kinetic energy round munition, a shaped charge round, a heat round,
3 a missile, an artillery, and a stabilized rod.

1 24. The system of claim 22 in which said vehicle is a tank.

1 25. The system of claim 22 in which said vehicle is an armored personnel
2 carrier.

1 26. The system of claim 22 in which said interceptor includes a warhead
2 section with a plurality of bays for holding said plurality of kinetic energy rods.

1 27. The system of claim 26 in which said bays are orientated such that said
2 kinetic energy rods are deployed in different predetermined directions for creating said
3 disbursed cloud.

1 28. The system of claim 22 in which said detection subsystem includes a radar
2 module for determining if the interceptor will hit or miss the incoming threat.

1 29. The system of claim 22 in which said detection subsystem includes a fuze
2 control unit for initiating said explosive charge.

1 30. The system of claim 22 in which said kinetic energy rods are made of
2 tantalum.

1 31. The system of claim 22 in which said rods are hexagon shaped.

1 32. The warhead of claim 22 in which the kinetic energy rods have a
2 cylindrical cross section.

1 33. The warhead of claim 22 in which the kinetic energy rods have a non-
2 cylindrical cross section.

1 34. The warhead of claim 22 in which the kinetic energy rods have a star-
2 shaped cross section.

- 1 35. The warhead of claim 22 in which the kinetic energy rods have a
2 cruciform cross section.
- 1 36. The warhead of claim 22 in which the kinetic energy rods have flat ends.
- 1 37. The warhead of claim 22 in which the kinetic energy rods are disk shaped.
- 1 38. The warhead of claim 22 in which the kinetic energy rods have a non-flat
2 nose.
- 1 39. The warhead of claim 22 in which the kinetic energy rods have a pointed
2 nose.
- 1 40. The warhead of claim 22 in which the kinetic energy rods have a wedge-
2 shaped nose.
- 1 41. The system of claim 22 in which said kinetic energy rods have a ductile
2 composition for preventing shattering thereof.
- 1 42. The system of claim 22 in which said explosive charge is shaped such that
2 detonation of said charge deploys said plurality of kinetic energy rods in a predetermined
3 direction to form said disbursed cloud.

1 43. The system of claim 22 in which said vehicle is a tank chosen from the
2 group consisting of a BMP-3 tank, a T-80MBT tank, a BMP-3 ICV tank, an ARENA
3 APS tank, and a T-80UM2 tank.